THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HAKAN OLSSON and MAGNUS RABE

Appeal No. 1997-3029
Application 08/416,526

HEARD: APRIL 7, 2000

Before HAIRSTON, LALL and GROSS, Administrative Patent Judges.

LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of all the pending claims, 1 through 11 and 13 through 18. Claim 12 has been canceled.

The disclosed invention relates to an ultrasonic sealing device for producing a sealing joint between two plastic

layers

in a package-filling machine. The sealing device must be capable of being mechanically fixed in place within a housing, machine or the like and therefore provided with a fixation region which is typically located at the nodal plane of the sealing device. In the case of rotationally symmetric sealing devices that produce a small spot weld, since all points on the periphery of the sealing device on any given plane behave in substantially the same way, it is rather easy to provide a mechanical fixation region at the nodal plane of the sealing device while at the same time making the sealing device one-half wavelength in length. The situation is different with sealing devices that are adapted to produce a long and narrow sealing joint. It was thought, prior to this invention, that a sealing device for a long and narrow sealing joint must be at least one full wavelength in length. The invention comprises making a sealing device for a long and narrow sealing joint of one-half wavelength in total length. The reaction bodies and the fixation region are arranged

accordingly. Claim 1 is reproduced below as illustrative of the invention.

1. A device for being fixedly secured in a machine to ultrasonically seal together two plastic layers along a long and narrow sealing joint, comprising a cylindrically shaped drive unit for being connected to an A.C. current source to generate an oscillation, a horn which oscillates during operation of the drive unit and which has one end at which is mounted the drive unit and an opposite end, the opposite end of the horn having a long and narrow end surface which defines a sealing surface for producing a long and narrow sealing joint during operation of the drive unit, and at least one reaction body mounted at the one end of the horn for assimilating counter forces created during oscillation of the horn to produce a nodal plane located below the drive unit, the at least one reaction body and the horn together defining a length of the device which is half a wave length.

The references relied on by the Examiner are:

McMaster et al. (McMaster)	3,368,085	Feb. 6, 1968
Shoh	3,524,085	Aug. 11, 1970
Mishiro	4,483,571	Nov. 20, 1984
Elbert et al. (Elbert)	4,607,185	Aug. 19, 1986
Wuchinich	5,057,182	Oct. 15, 1991

Claims 1 to 11 and 13 to 18 stand rejected under 35 U.S.C. § 103 over Wuchinich or Elbert or Mishiro in view of either Shoh or McMaster.

Reference is made to Appellants' briefs[1] and the Examiner's answer for their respective positions.

OPINION

We have considered the record before us, and we will reverse the rejection of claims 1 to 11 and 13 to 18.

With respect to claims 1 to 11 and 13 to 18, the Examiner has failed to set forth a prima facie case of obviousness. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the art, or by implications contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." Para-Ordnance Mfg. v. SGS Importer Int'l, Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), cert. denied, 117 S.Ct. 80 (1996) citing W. L. Gore & Assocs.,

[1] A reply brief was filed as paper no. 25 and its entry approved without any response from the Examiner [paper no. 27].

Inc. v. Garlock, Inc., 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

There are only two independent claims, 1 and 16. Claim 1 is broader in scope than claim 16. Therefore we take claim 1 for our analysis.

The crux of the issues is whether the device shown in Wuchinich or Mishiro or Elbert, each of which is designed for a long narrow sealing edge and each of which is at least one full wavelength in length, can be obviously modified to be one-half wavelength in length in view of Shoh or McMaster, each of which is one-half wavelength in length but is capable of yielding only spot welding or sealing rather than long narrow welding or sealing.

We have carefully reviewed the positions of Appellants [brief, pages 14 and 17 and reply brief, pages 2 to 7] and the examiner [answer, pages 2 to 5]. We also considered the two declarations provided by Appellants [paper nos. 16 and 19]. We are persuaded by Appellants' arguments and the two declarations that, to achieve the claimed device, it is not a matter of merely "optimizing a known device ... to specific dictated job requirements ..." as the Examiner asserts

[answer, page 2]. As the declaration [paper no. 16] shows, via a result of the finite element analysis of the stresses and strains in the modified Elbert's device (most similar to the claimed device), the stresses caused by simply changing the length of Elbert's device to one-half wavelength cause unequal forces within the device and yield a non-uniform sealing surface. Such an uneven surface will be unsuitable as a sealing surface, see figures 5 and 6 of the declaration. It appears to us that an appropriate reaction body has to be provided for assimilating counter forces from the drive unit to produce an appropriate nodal plane. Moreover, the nodal plane is claimed to be located below the drive unit to achieve a uniform and even sealing surface. The Examiner has not produced any evidence, or a line of reasoning, to show us how an artisan would have been able to take Elbert's device and reduce it to the claimed one-half wavelength total length in view of the teachings of McMaster or Shoh. Neither McMaster or Shoh encounters the problem of unequal forces in his device, as it is designed for only spot welding or sealing, and not for long and narrow welding or sealing. Thus, they do not disclose the need for the claimed reaction body and,

furthermore, the location of the reaction body relative to the drive unit. Our analysis applies equally to the suggested modification of the device shown by Wuchinich or Mishiro. Therefore, we do not sustain the obviousness rejection of claim 1 and dependent claims[2] 2 to 11 and 13 to 15 over Wuchinich or Elbert or Mishiro in view of either Shoh or McMaster.

As for the other independent claim 16, it is narrower in scope than the independent claim 1 discussed above. Therefore, we also do not sustain, for the same rationale as claim 1, the obviousness rejection of claim 16 and its dependent claims 17 and 18 over Wuchinich or Elbert or Mishiro in view of either Shoh or McMaster.

DECISION

The decision of the Examiner rejecting claims 1 to 11 and 13 to 18 under 35 U.S.C. § 103 is reversed.

REVERSED

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[2] Dependency of claim 4 seems misplaced and needs further inspection.

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
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	)	
PARSHOTAM S. LALL	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
ANITA PELLMAN GROSS	)	
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